

AI4Media Junior Fellows Exchange Program Mobility Testimonials



Foreword

While AI is quickly reshaping the media industry landscape, media companies still face significant challenges in recruiting personnel that are skilled in AI. At the same time, AI researchers often lack insights on media industry needs. On top of that, mobility and collaboration between AI labs has yet to reach its full potential despite a number of relevant initiatives. To establish Europe as a media AI powerhouse, it is necessary to promote exchange programs that will focus on AI research or applications for the media industry.

The AI4Media project launched the **Junior Fellows Exchange Program** in June 2021 to facilitate mobility of young researchers working on AI for the media & society. The program aims to develop new skills, improve diversity, increase visibility, and strengthen the impact of media AI through exchanges of researchers and media professionals between academia, research institutions, and the media industry. Each exchange is expected to produce tangible open access results on AI for media while enabling the spread of expertise and skills across Europe and building strong collaborations between AI labs and/or media companies.

While experienced researchers are not excluded, the program is primarily expected to contribute to the creation of a critical mass of early career researchers with a deeper understanding of media industry needs and significant experience in media AI research through their engagement with top media AI research labs and media companies in Europe. Both AI labs and media companies will benefit from the flow of novel ideas and the spread of media AI expertise and skills across Europe.

After almost two years of operation, the AI4Media Junior Fellows Exchange Program is already a success, having facilitated more than 50 exchanges of junior and senior researchers from over 40 organisations across Europe and producing important outcomes in the form of publications, open software, and open datasets.

This booklet presents the **testimonials of 20 Junior Fellows** that took part in the program during 2021 and 2022, discussing the research projects they worked on, the experiences and knowledge they have gained, their assessment of the opportunities offered by the program, and their advice and recommendations to young AI researchers who are thinking about a potential exchange.

We thank them for their contributions to the AI4Media project and community and invite junior and senior AI researchers across Europe to consider embarking in the amazing journey and opportunities offered by the AI4Media Junior Fellows Exchange Program!

The AI4Media Junior Fellows Program Coordinators

→ **Dr Yiannis Kompatsiaris**

AI4Media Coordinator

Director of the Information Technologies Institute, Centre for Research and Technology Hellas, Greece

→ **Prof. Daniel Gatica-Perez**

Head of the Social Computing Group, Idiap Research Institute, Switzerland

Know more about the AI4Media Junior Fellows Exchange Program

The AI4Media Junior Fellows Exchange Program facilitates exchanges of early career researchers that want to improve their skills and knowledge in AI for the media and society by collaborating with top European AI researchers and media companies to conduct innovative research that considers industry needs.

The AI4Media Junior Fellows Exchange Program offers research exchange opportunities for PhD students, MS students, and early career postdocs but also senior researchers that want to improve their skills and knowledge in AI for the media and society.

Each exchange involves one Fellow, one Sender institution, and one Host institution, with either the Sender or the Host being an AI4Media partner. Exchanges can be physical, virtual, or hybrid. The travel and living costs of physical exchanges are partly covered by the AI4Media mobility budget.

The topics of exchanges are relevant to the research directions and use cases of AI4Media, extending existing AI4Media research and applications through the delivery of novel algorithms, software and datasets. Emphasis is put on promoting exchanges between media companies and AI labs to strengthen industry/ research collaboration.

While involvement of early career researchers is the primarily target, participation of more experienced ones is also welcome.

How to apply?

The online portal of the **AI4Media Junior Fellows Exchange** Program is open for applications at <https://www.ai4media.eu/junior-fellows-program/> with more information on participation rules and application procedure.

The application procedure follows three simple steps:

- **STEP #1** - Create a Host or Sender **profile** on the AI4Media website.
- **STEP #2** - Search in the **matchmaking section** for the Host or Sender institution profile that better meets your exchange interests. You can also send an email to info@ai4media.eu to briefly tell us what your research interests are and what you are looking for in an exchange.
- **STEP #3** - Get in contact with a suitable Host or Sender institution, agree on the terms of mobility, and SUBMIT a joint **application** through the online form.

We are looking forward to receiving new applications from talented young researchers working on AI for Media & Society to increase the diversity, impact, and visibility of AI made in Europe!



Name of participant
Alessio Molinari

Sender institution
ISTI-CNR

Host institution
University of
Amsterdam

From
Pisa,
Italy

To
Amsterdam,
The Netherlands

Q1: Can you please share your name and say a few words about your exchange within the Junior Fellows Program?

My name is Alessio Molinari, I am a PhD student at the University of Pisa, in Italy. I participated in AI4Media's Junior Fellows Exchange Program, which gave me the opportunity to go to Amsterdam, to the IRLAB (at the University of Amsterdam, UVA). I joined Prof. Evangelos Kanoulas' lab to work on my research on using deep learning algorithms to enhance systematic review screening in empirical medicine. This is also applicable to online content moderation.

Q2: Can you please tell us about the objectives and results of your project in the context of the Junior Fellows exchange opportunity?

The objective was to study and research on the transferability of knowledge (i.e., transfer learning) in technology-assisted review (TAR) tasks (that is, tasks where we help a human to review/label a large collection of items). In particular, I focused on the production of systematic reviews in empirical medicine. We carried out several preliminary analyses to understand whether transfer learning is applicable in TAR tasks (and whether we can continuously train deep learning models). This work resulted in a publication: Molinari, Alessio, and Evangelos Kanoulas. "Transferring knowledge between topics in systematic reviews." *Intelligent Systems with Applications* 16 (2022): 200150. <https://doi.org/10.1016/j.iswa.2022.200150>

Q3: Can you please share one unique experience or insight you gained from your project and (if applicable) mobility experience, that would have been difficult to have otherwise?

In the Netherlands I had the opportunity to visit the Cochrane research group, a group of physicians experts in systematic reviews. Getting face-to-face with the tasks and the people your research is directed to is a unique experience: needless to say, this wouldn't have been possible had I not visited Amsterdam. On a more utilitarian point of view, my visit to Amsterdam also resulted in a research paper published on a journal, which contributed towards my PhD thesis.

Q4: Would you recommend this experience to your peers? What would you say to them?

I would totally recommend this experience to anyone. Going abroad, meeting people from all over the world (if you go to a heterogeneous and international research group) and see how other labs do research is an incredibly useful experience. I would recommend going abroad, even if the experience turned out to be unpleasant (or not as you expected): this would still give you the possibility of maybe understanding what you want for your future, or what to look for next time you go to another research lab or industry.



Name of participant
Alexandra Andrei

Sender institution

University Politehnica
of Bucharest

Host institution

HES-SO Valais Wallis

From

Bucharest,
Romania

To

Sierre,
Switzerland

Q1: Can you please share your name and say a few words about your exchange within the Junior Fellows Program?

My name is Alexandra Andrei, I am a PhD student at Politehnica University of Bucharest, in Romania. I participated in AI4Media's Junior Fellows Exchange Program, which gave me the opportunity to go to Switzerland to the Swiss Digital Center (HES-SO Valais Wallis) to work on my research on generating synthetic data using Generative Adversarial Networks.

Q2: Can you please tell us about the objectives and results of your project in the context of the Junior Fellows exchange opportunity?

The objective was to develop algorithms in the area of privacy in AI, without sacrificing data utility by creating systems to generate synthetic data, visual content in particular. We proposed a conditional generative adversarial network (GAN) to generate realistic histopathology images from seven tissue types.

Q3: Can you please share one unique experience or insight you gained from your project and (if applicable) mobility experience, that would have been difficult to have otherwise?

The Junior Fellows exchange opportunity offered me the chance to talk to many researchers and PhD students in the field of AI and thus I was able to improve my skills, broaden my knowledge and expand my research activities.

Q4: Would you recommend this experience to your peers? What would you say to them?

To anyone considering taking part in the Junior Fellows Exchange Program, I sincerely advise you to do it, it's an unforgettable experience! You will not only extend your skills and knowledge, but you will also meet people, experience unique things, and gain unforgettable memories.



Name of participant
Ana Maria Dragulinescu

Sender institution
University Politehnica
of Bucharest

Host institution
Côte d'Azur University

From
Bucharest,
Romania

To
Nice,
France



Q1: Can you please share your name and say a few words about your exchange within the Junior Fellows Program?

As a member of the AI4Media project team and AI Multimedia Lab of Politehnica University of Bucharest (UPB), in Romania, I participated in a 2-month AI4Media Junior Fellow Exchange between my university - with the support of Prof. Bogdan Ionescu (UPB), the leader of the AI Multimedia Lab - and Université Côte d'Azur (UCA). I was hosted by the I3S Laboratory in Sophia Antipolis, France and, during the exchange, I had the opportunity to enrich myself from several perspectives.

Q2: Can you please tell us about the objectives and results of your project in the context of the Junior Fellows exchange opportunity?

The exchange aimed at developing a new method for multimedia network control based on Column Generation optimization algorithm and Graph Neural Networks. The exchange certainly opened new collaboration opportunities between the two institutions and the work started in I3S Laboratory currently continues remotely after the end of the two months of the physical exchange. During both the physical exchange and remote collaboration, I had many meetings with the supervising team, and I always received an answer to my questions. In addition, I was constantly encouraged and advised, which is very important when dealing with new topics. The work is still in progress and a joint paper will be published soon.

Q3: Can you please share one unique experience or insight you gained from your project and (if applicable) mobility experience, that would have been difficult to have otherwise?

In the I3S Laboratory, I met very open and friendly colleagues that made my integration a very simple task. I had a very well-organized schedule combining the research, networking and travel, while being able to remotely manage the tasks I was responsible for in my sending institution where I am tenured lecturer. Given the fact that I was included in the mailing list of I3S Laboratory, I received invitations and I had the opportunity to participate in research events as (1) the Coeur Numérique Conference, where I attended the presentations of the European project inEurHearth experts (e.g. Prof. Vicente Zarzoso) in artificial intelligence (AI), digital twin and cardiology who discussed the impact of digital transformation and AI innovations in the diagnosis and treatment of cardiovascular pathologies or (2) the speech of Prof. John Shawe-Taylor from University College London (UCL) on "Statistical Learning Theory for Modern Machine Learning".

Q4: Would you recommend this experience to your peers? What would you say to them?

I had the chance to explore Côte d'Azur which is an extremely charming place, with very enchanting and relaxing landscapes in the pleasant warmth of the September and October months. I would like to thank the AI4Media consortium for proposing these activities, enabling fructuous cooperation and reciprocal reinforcement between partners.



Name of participant
Andrea Pedrotti

Sender institution
ISTI-CNR

Host institution
University of Heidelberg

From
Pisa,
Italy

To
Heidelberg,
Germany



Q1: Can you please share your name and say a few words about your exchange within the Junior Fellows Program?

My name is Andrea Pedrotti and I am a PhD student at the University of Pisa in Italy. I participated in AI4Media's Junior Fellows Exchange Program, which allowed me to join the Natural Language Processing Group of Heidelberg University, in Germany. There I have worked on the topic of multi-modal machine learning focusing on the assessment of Video-and-Language models' capabilities to align visual and textual domains. The exchange lasted 9 months, with the first one carried out remotely. The remaining time was spent on site in Heidelberg.

Q2: Can you please tell us about the objectives and results of your project in the context of the Junior Fellows exchange opportunity?

Vision-and-Language (VL) models should be able to address shortcomings of Large Language Models (LLMs) (e.g., lack of symbol grounding, reporting bias) by transferring information encoded in the visual domain to the language domain, and vice versa, by successfully modelling a cross-modal space. Despite promising results on multimodal tasks, recent literature has shown that models integrating image and text are highly susceptible to statistical bias present in large-scale training data, enabling them to solve multi-modal tasks without leveraging multi-modal signals. For this reason, we focused on the construction of a controlled benchmark revolving around a task based on change-of-state actions, which should not be solvable unless the visual and textual domains are concurrently considered.

Q3: Can you please share one unique experience or insight you gained from your project and (if applicable) mobility experience, that would have been difficult to have otherwise?

One interesting insight resulting from our experiments is the importance of the sampling approach of the visual modality encoder. Indeed, both the frequency and the distribution play an important role in determining what kind of tasks can be meaningfully solved by these multi-modal language models.

Q4: Would you recommend this experience to your peers? What would you say to them?

I would definitely recommend the experience to my peers. For me, it was my first time spending such a long time researching abroad. The exchange gave me the chance to understand how research is carried out abroad: the different workflows, the different objectives and the organization. With my colleagues at Heidelberg University, I had both the chance to broaden my views and to improve my communication in a foreign language. Last but not least, spending a period abroad is a perfect opportunity to truly discover life outside one's own country, which is also an invaluable lesson.



Name of participant
Andrea Rigo

Sender institution
University of Trento

Host institution
University of Amsterdam

From
Trento,
Italy

To
Amsterdam,
The Netherlands



Q1: Can you please share your name and say a few words about your exchange within the Junior Fellows Program?

My name is Andrea Rigo, I'm a master student at the University of Trento, Italy. The AI4Media's Junior Fellows Exchange Program allowed me to get an in-person research internship at the Video & Image Sensing Lab, at the University of Amsterdam. I lived in the Netherlands for six months working on my research on deep generative models, which also became my master thesis and I had the opportunity of meeting many international PhDs working on my field of study.

Q2: Can you please tell us about the objectives and results of your project in the context of the Junior Fellows exchange opportunity?

The project was about layout-to-image generation. Given the desired position and size of objects, the model generates a realistic image following those specifications. When objects overlap, it becomes unclear which object should appear in front of the other so they can end up being fused together. The objective of the project was to investigate whether providing the model with depth information, which explicitly informs the model of which objects go in front of the others, can result in better occlusion handling. Unfortunately, within the analyses carried out during the exchange period, this did not prove to be true.

Q3: Can you please share one unique experience or insight you gained from your project and (if applicable) mobility experience, that would have been difficult to have otherwise?

The research done during the exchange showed that the additional conditioning on depth does not substantially improve the performance of the model. During the research I synthesized a new dataset and carried out several analyses to investigate the impact of depth conditioning on the model performance. These will not be published but they will become my master thesis. The exchange allowed me to work on my project in an international environment, being helped by other researchers by having stimulating discussions about the topic.

Q4: Would you recommend this experience to your peers? What would you say to them?

I definitely recommend to study or work in a different country to anyone who has the opportunity to do it. From a professional point of view this will allow you to meet experts on your field and discuss with them, learning new insights about the topic from them. But outside of your work, it will allow you to experience a different country and its culture and make both local and international friends. For me, it was a very stimulating and enriching experience.



Name of participant
Daniel Aláez Gómez

Sender institution

Public University
of Navarre

Host institution

Aristotle University
of Thessaloniki

From

Pamplona,
Spain

To

Thessaloniki,
Greece



Q1: Can you please share your name and say a few words about your exchange within the Junior Fellows Program?

My name is Daniel Aláez, I am a PhD student at the Public University of Navarre, Spain. I participated in AI4Media's Junior Fellows Exchange Program, which allowed me to visit Greece to work at the Artificial Intelligence and Information Analysis Laboratory at the Aristotle University of Thessaloniki (AUTH). We worked on automatic Unmanned Aerial Vehicle (UAV) cinematography.

Q2: Can you please tell us about the objectives and results of your project in the context of the Junior Fellows exchange opportunity?

The emphasis of my project was to investigate vision-based Deep Neural Networks (DNNs) for high-level on-line cinematography planning and low-level camera motion/parameters trajectory planning for UAV media production. We implemented vision-based techniques on different hardware platforms and evaluated the performance of various edge computing solutions.

Q3: Can you please share one unique experience or insight you gained from your project and (if applicable) mobility experience, that would have been difficult to have otherwise?

It was an amazing experience to live and work with one of the world's most talented and respected Computer Vision research groups. I have gained invaluable insights and learned a lot during this experience. We are sharing the results of our project at ACM ICMR23.

Q4: Would you recommend this experience to your peers? What would you say to them?

I would strongly recommend this experience to all of my peers. The AI4Media team has supported me all the way during this experience and made it effortless. Thank you all!



Name of participant
Davide Coccomini

Sender institution

ISTI-CNR

Host institution

Centre for Research
& Technology, Hellas

From

Pisa,
Italy

To

Thessaloniki,
Greece



Q1: Can you please share your name and say a few words about your exchange within the Junior Fellows Program?

My name is Davide Coccomini, I am a PhD student in Information Engineering at the University of Pisa and a Research Associate at the AIMH laboratory of the National Research Council of Italy (ISTI-CNR). I participated in AI4Media's Junior Fellows Exchange Program, which gave me the opportunity to go to Greece to the Centre for Research & Technology, Hellas (CERTH) to work on my research on Video Deepfake Detection.

Q2: Can you please tell us about the objectives and results of your project in the context of the Junior Fellows exchange opportunity?

During this time, I worked on a Video Deepfake Detector capable of facing specific situations that can be encountered in the real-world such as identifying anomalies within videos with many people or dealing with variations in the distance between the face and the camera. The detector we made, which we called MINTIME, achieved state-of-the-art performance, solving several open problems and we are in the process of publishing a paper summarizing the work done.

Q3: Can you please share one unique experience or insight you gained from your project and (if applicable) mobility experience, that would have been difficult to have otherwise?

Definitely the value I got from the people I came into contact with. Having the opportunity to exchange ideas and points of view with other researchers and students was certainly the most enriching thing for me. The work I did was very exciting, allowed me to learn a lot and led to excellent results.

Q4: Would you recommend this experience to your peers? What would you say to them?

I would absolutely recommend this experience to anyone who is willing to do it and get involved, they will definitely be enriched by it. It will also be very helpful to broaden horizons and understand how other research communities are addressing the problems in a specific field.



Name of participant
Diogo Rato

Sender institution

Technical Institute
of the University of Lisbon

Host institution

Institute of Digital Games,
University of Malta

From

Lisbon,
Portugal

To

Msida,
Malta

Q1: Can you please share your name and say a few words about your exchange within the Junior Fellows Program?

My name is Diogo Rato and I am a PhD Student at the University of Lisbon and a junior researcher at INESC-ID, in Portugal. When approaching the last year of my doctoral program, I was interested in visiting Prof. Georgios Yannakakis and Prof. Antonios Liapis in Malta to perform a final project for my dissertation. AI4Media's Junior Fellows Exchange Program allowed me to visit the Institute of Digital Games at the University of Malta for 3 months.

Q2: Can you please tell us about the objectives and results of your project in the context of the Junior Fellows exchange opportunity?

Up until my visit to IDG, my research work focused on studying and developing socio-cognitive models for several types of agents. However, my main research goal was to deploy non-player characters, particularly large populations of social agents as game characters. The experience of IDG's research in games research, specifically in mixed-initiative design, allowed me to explore new algorithmic methods to create content for games while taking into account author goals.

Q3: Can you please share one unique experience or insight you gained from your project and (if applicable) mobility experience, that would have been difficult to have otherwise?

There are two main outcomes from this experience that are worthy of highlighting. I designed and developed a framework to orchestrate the deployment of social agents in Minecraft. Using this framework, we created a pipeline to intelligently create and deploy such agents, collect a dataset of their in-game interactions and, using data-driven approaches, evolve the population towards satisfying authors' design goals.

Q4: Would you recommend this experience to your peers? What would you say to them?

I would definitely recommend others to visit the AI4Media website and look for the multiple opportunities the research network has to offer to junior researchers. In fact, after returning from Malta, other researchers from my host institution already benefited from the Junior Fellows Exchange Program.



Name of participant
Gabriele Lagani

Sender institution
ISTI-CNR

Host institution
Joanneum Research

From
Pisa,
Italy



To
Graz,
Austria



Q1: Can you please share your name and say a few words about your exchange within the Junior Fellows Program?

Hello, my name is Gabriele Lagani, Computer Science PhD student from University of Pisa and ISTI-CNR Pisa, in Italy. I was hosted by Joanneum Research in Graz, Austria, in hybrid mobility. I spent one month working there and one month collaborating online. During the mobility program, I had the chance to make significant progress with my research on Bio-inspired methods for deep learning.

Q2: Can you please tell us about the objectives and results of your project in the context of the Junior Fellows exchange opportunity?

I developed a faster and more scalable solution for a biological neural network plasticity model called Hebbian learning. The resulting method, called FastHebb, and the preliminary results were then published at the SISAP 2022 conference FastHebb: Scaling Hebbian Training of Deep Neural Networks for Feature Extraction to ImageNet Level; G. Lagani, C. Gennaro, H. Fassold, G. Amato; SISAP, 2022. <https://doi.org/10.48550/arXiv.2207.03172>

Q3: Can you please share one unique experience or insight you gained from your project and (if applicable) mobility experience, that would have been difficult to have otherwise?

For me, the mobility experience was a great opportunity to meet new people and gather different perspectives on my work, also regarding other researchers' work. This is something that can also be experienced in conferences, but just for a very short period, while the mobility program gives you enough time to really dive deep.

Q4: Would you recommend this experience to your peers? What would you say to them?

Yes, the mobility program is a great opportunity to establish relationships with foreign institutions, meet other researchers, and experience different workplaces.



Name of participant
Manuel Francisco

Sender institution

University of Granada

Host institution

ISTI-CNR

From

Granada,
Spain

To

Pisa,
Italy



Q1: Can you please share your name and say a few words about your exchange within the Junior Fellows Program?

From February to April 2022, I had the pleasure to work alongside Alejandro Moreo and Fabrizio Sebastiani at ISTI-CNR (Pisa, Italy) during my PhD research visit. They introduced me to quantification and offered me to participate in their ongoing research regarding multi-label quantification, which aligned with the interest of my research line. Quantification has been extensively studied in single-label scenarios (i.e., when the label set contains several mutually exclusive classes), but the multi-label setup (i.e., when the label set may present zero to many labels) remained mostly unexplored.

Q2: Can you please tell us about the objectives and results of your project in the context of the Junior Fellows exchange opportunity?

With the investigation having already started, I had to strive to catch up. Luckily, Alejandro helped me a lot. We tested several multi-label approaches, such as problem transformation (i.e., reducing the problem to a single-label classification one) and algorithm adaptation (i.e., adapt known algorithms to work with multi-label scenarios), even though ensembles seemed like the natural approach. We selected 15 popular multi-label datasets that are widely used in related work, some of them with more than a hundred labels, with the biggest one close to a thousand. After two months of setup and one more of CPU-hungry experiments, we obtained models that were able to take into account stochastic relations between labels and produce accurate estimations, therefore confirming that multi-label quantification is possible and profitable. After the mobility experience, we were able to submit our manuscript.

Q3: Can you please share one unique experience or insight you gained from your project and (if applicable) mobility experience, that would have been difficult to have otherwise?

The applicability in my research area is straightforward: we were able to measure Twitter sentiment evolution towards different political parties during a political debate. However, many other fields may benefit from multi-label quantification, such as market research, resource allocation, epidemiology and psychology, to name a few.

Q4: Would you recommend this experience to your peers? What would you say to them?

I really enjoyed my stay in Pisa. My work was pleasant and enriching, and my co-workers were amazing. The city has many open spaces if you like to read (I really recommend to spend an afternoon at the botanical garden) and it is close to both the sea and the mountain, which is perfect for a walk or a hiking trip. Since it is a small city, you can go everywhere on foot (including the airport, it is a 40-minute walk from the city centre), which I think is very positive if you are planning a short research visit and you prefer not to complicate yourself with buying a bike or a public transport card. Pisa is well connected by train with many other cities. Therefore, you can spend your weekends getting to know the famous Italian cuisine or the ancient roots of the Roman Empire. All in all, working in ISTI-CNR with Alejandro and Fabrizio has been a sustaining experience. They are not only great researchers but also welcoming people, and I am very grateful for the chance they gave me and for all that I have learnt from them.



Name of participant
Mara Graziani

Sender institution
HES-SO Valais Wallis

Host institution
University of Paris

From
Sierre,
Switzerland

To
Paris,
France



Q1: Can you please share your name and say a few words about your exchange within the Junior Fellows Program?

My name is Mara Graziani, and I am a postdoc researcher in AI, and particularly on the interpretability and safety of AI models. I was hosted by the University of Paris, thanks to the AI4Media Junior Fellows Program. I did part of the exchange from remote, and then I went to visit the university in person for a period of two weeks.

Q2: Can you please tell us about the objectives and results of your project in the context of the Junior Fellows exchange opportunity?

The objectives of the exchange were to broaden my connections with researchers that have different applications requiring AI interpretability and safety, such as the group of Nicolas Lomenie at the University of Paris, where they work on complex models to predict tumour heterogeneity, response to treatment and genetic alterations.

Q3: Can you please share one unique experience or insight you gained from your project and (if applicable) mobility experience, that would have been difficult to have otherwise?

I am grateful for this exchange, since I have learned the requirements of an entirely new field, that is sitting at the bridge of multiple applications of technology. During the exchange, I have learned the issues associated with the regression of continuous values from extremely high resolution images, and this led to a final publication of a scientific paper.

Q4: Would you recommend this experience to your peers? What would you say to them?

I would recommend the AI4Media Exchange Program to all my peers, as it really gives the opportunity to create new links in top universities in Europe that are working on AI.



Name of participant
Maya Guido

Sender institution
University of Zurich

Host institution
Idiap Research Institute

From
Zurich,
Switzerland

To
Martigny,
Switzerland

Q1: Can you please share your name and say a few words about your exchange within the Junior Fellows Program?

My name is Maya Guido and I'm currently a Computer Science student at the University of Zurich, in Switzerland. The AI4Media's Junior Fellows Exchange Program allowed me to do a remote exchange at the Social Computing Group at Idiap Research Institute and EPFL, also in Switzerland, both led by Prof Daniel Gatica-Perez.

Q2: Can you please tell us about the objectives and results of your project in the context of the Junior Fellows exchange opportunity?

The objective of my research project was to investigate data documentation techniques in machine learning. Many data documentation methods claim to enhance machine learning by making it more transparent and thus contributing to fairness, accountability and ethics in ML models. In my Junior Fellows exchange, I had the opportunity to investigate a documentation method called Datasheets. Together with another Junior Fellow, I created a Datasheet for a dataset he collected, while gathering insights about the efficacy of the documentation method itself.

Q3: Can you please share one unique experience or insight you gained from your project and (if applicable) mobility experience, that would have been difficult to have otherwise?

It can be daunting to find the right data to work with in machine learning research. The fellowship exchange provided me with unique resources and datasets that enabled me to make insightful discoveries for further research in my area. On top of that, I had the pleasure to collaborate with other AI4Media Fellows and learn about their projects, which was a truly enriching experience.

Q4: Would you recommend this experience to your peers? What would you say to them?

I would recommend this experience to anyone who wants to benefit from a strong and diverse network of institutions. It was amazing getting to know many talented young researchers and their work.



Name of participant
Mirko Bunse

Sender institution
University of Dortmund

Host institution
ISTI-CNR

From
Dortmund,
Germany

To
Pisa,
Italy



Q1: Can you please share your name and say a few words about your exchange within the Junior Fellows Program?

I am Mirko Bunse, by now a Post-Doc at TU Dortmund University, in Germany. During the final year of my PhD program, I visited Fabrizio Sebastiani and Alejandro Moreo at Consiglio Nazionale delle Ricerche (CNR) in Pisa, Italy, as a part of AI4Media's Junior Fellows Exchange Program. This research visit was in-person, and therefore related to a beautiful time in the city of Pisa and its surroundings. Earlier, my hosts and I had discovered at a workshop that we had been approaching the same mathematical problem from two different applications and view-points. We wanted to bring together these perspectives through a research visit.

Q2: Can you please tell us about the objectives and results of your project in the context of the Junior Fellows exchange opportunity?

My hosts and I took up the great opportunity of the Junior Fellow exchange program to write a paper on ordinal quantification for the European Conference on Machine Learning. We were preparing the paper already some time beforehand and used the exchange to do the final, heavy lifting of it. Our goal was to unify algorithms and notations from two different research fields, which had not been discussed before as solutions to the same mathematical problem. Our submission got accepted and we are still, about a year after my visit, continuing our activities on the subject.

Q3: Can you please share one unique experience or insight you gained from your project and (if applicable) mobility experience, that would have been difficult to have otherwise?

This research visit was the first one of my career, as well as my first long-term stay abroad. Hence, it is connected to many beautiful experiences, both personally and professionally. Moreover, the collaboration between my hosts and me actually required an extended in-person meeting – otherwise, it would not have been as intense and thorough as the one we had.

Q4: Would you recommend this experience to your peers? What would you say to them?

I definitely recommend a long-term stay abroad to my peers. Discuss funding opportunities with your supervisor. Ask researchers you meet at conferences about their interest in hosting you. Connect your research visit to a clear goal, e.g., to submitting a manuscript at the end of your stay. Start working on this project already before your visit. Make sure you are mobile at the place you visit – I bought a cheap, used bicycle on site, which quickly brought me to every place in town. Enjoy the after-work time and the weekends with discovering the city, activities and local restaurants.



Name of participant
Moreno D'Inca

Sender institution
University of Trento

Host institution
Queen Mary University
of London

From
Trento,
Italy

To
London,
United Kingdom



Q1: Can you please share your name and say a few words about your exchange within the Junior Fellows Program?

My name is Moreno D'Inca currently a PhD student at the University of Trento, in Italy. During my final year of the Master's degree in Artificial Intelligence Systems (University of Trento) I had the opportunity to make my Master's thesis abroad by joining AI4Media with its Junior Fellows' Exchange Program. This program gave me the chance to travel to London and join the Multimedia and Vision Research Group of the Queen Mary University of London, under the supervision of professor Ioannis Patras, where we carried out our research on vision-language driven image augmentation.

Q2: Can you please tell us about the objectives and results of your project in the context of the Junior Fellows exchange opportunity?

The project aimed at leveraging pre-trained Generative Adversarial Networks (GANs) for the task of image augmentation with the scope of improving downstream tasks. We focused on the facial domain, specifically on emotion recognition, gender classification and age classification. Through the designed augmentation approach, we made use of an inversion method (e4e) to obtain the inverted latent codes from the images we wanted to augment. These latent codes were then manipulated by traversing a given non-linear path found in the trained latent space of the GAN (ContraCLIP). In this way, we were able to induce an augmentation on the original images by generating the new pictures using the manipulated latent codes. We designed different augmentation approaches and the results showed an improvement in the downstream tasks by exploiting the new augmented images during training.

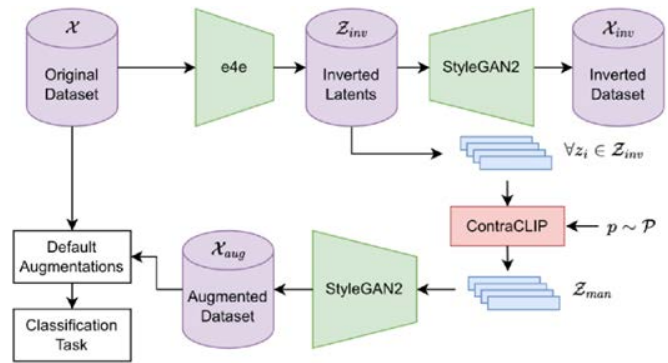


Figure 1 - Overview of the proposed augmentation approach

Q3: Can you please share one unique experience or insight you gained from your project and (if applicable) mobility experience, that would have been difficult to have otherwise?

This experience gave me the possibility to live in London for five months, from May 2022 to September 2022, getting to know the city and a new research group, expanding my network. The research project is still under development but one of the unique aspects of this exchange program is the possibility to work on cutting-edge research topics and submit our work to a top international computer vision conference.

Q4: Would you recommend this experience to your peers? What would you say to them?

I would like to thank AI4Media for this unique opportunity and also suggest the experience to students who might be considering it. This is really a unique opportunity which will give them the chance to work on cutting-edge research and grow their network and experience.



Name of participant

Olga Papadopoulou

Sender institution

Centre for Research and Technology Hellas

Host institution

Athens Technology Center

From

Thessaloniki, Greece

To

Athens, Greece

Q1: Can you please share your name and say a few words about your exchange within the Junior Fellows Program?

My name is Olga Papadopoulou. I am a Research Associate at the Information Technologies Institute of the Centre for Research and Technology Hellas (ITI-CERTH), in Greece. I participated in AI4Media's Junior Fellows Exchange Program, which gave me the opportunity to remotely collaborate with the Athens Technology Center (ATC) to enhance the verification-related functionalities of the Truly Media platform, and specifically the DeepFake detection and image forensics analysis features, two media verification services that are commonly used by journalists and fact-checking experts for digital content verification and disinformation analysis.

Q2: Can you please tell us about the objectives and results of your project in the context of the Junior Fellows exchange opportunity?

The main objective of this Junior Fellow exchange was to improve the verification-related functionalities of the Truly Media platform. Specifically, we extended the ongoing collaboration between CERTH and ATC with the aim of optimising the integration of DeepFake detection and image forensics services in the Truly Media platform and enriching the platform with new verification-related features. We improved the DeepFake detection component by enriching the verification-related results and providing features to speed up the verification process. Additionally, a new functionality was integrated to assist users in detecting synthetic

images, which is a challenging type of fake images for non-expert users to identify authenticity. Concerning image forensics, we enriched the tool with new image forensics algorithms that detect noise-based and copy-move forgeries to offer better support for the detection of a larger variety of manipulations.

Q3: Can you please share one unique experience or insight you gained from your project and (if applicable) mobility experience, that would have been difficult to have otherwise?

A unique experience I gained from my participation in AI4Media's Junior Fellows Exchange Program is that this collaboration goes beyond the scope of the work conducted in AI4Media, with the final aim of productionising CERTH's services for commercial use by existing Truly Media customers. The insights I gained from transferring research work to actual real-life usage is a case that would have been difficult to meet in my working environment.

Q4: Would you recommend this experience to your peers? What would you say to them?

I would definitely recommend the experience of participating in AI4Media's Junior Fellows Program. The program enables researchers to get involved in fields that are not familiar to them, with the possibility of enriching their knowledge and experiences.



Name of participant
Pablo González

Sender institution
University of Oviedo

Host institution
ISTI-CNR

From
Oviedo,
Spain

To
Pisa,
Italy



Q1: Can you please share your name and say a few words about your exchange within the Junior Fellows Program?

My name is Pablo González. I am an assistant teacher and researcher at the University of Oviedo in the north of Spain. I participated in the AI4Media Junior Fellow exchange during my research stay at CNR (Consiglio Nazionale delle Ricerche), in Pisa, Italy. My mobility had a duration of three months, during the summer of 2022. I was there in person, living and working in Pisa.

Q2: Can you please tell us about the objectives and results of your project in the context of the Junior Fellows exchange opportunity?

The main objective of my stay was to work and develop a relationship with the research group led by Fabrizio Sebastiani at CNR. This research group is one of the most active and prestigious in the field of quantification around the world. In my sender university, we also work on quantification, so having the opportunity to work with them during 3 months, was a great experience.

Q3: Can you please share one unique experience or insight you gained from your project and (if applicable) mobility experience, that would have been difficult to have otherwise?

During my stay we worked on a paper entitled “Dataset shift in binary quantification”, in which we are still working on. My stay in Pisa also helped to build a relationship that continues to this very moment, when we are still working together in some projects related with quantification, including the organization of a workshop on quantification, among other things.

Q4: Would you recommend this experience to your peers? What would you say to them?

Sure! Going abroad, learning how others work, meeting different people from other research centres, is always a great experience. Not only was I fortunate in the professional side but also in the personal side, as the people I met there have become not only partners but also good friends.



Name of participant
Pedro Fernandes

Sender institution

Technical Institute
of the University of Lisbon

Host institution

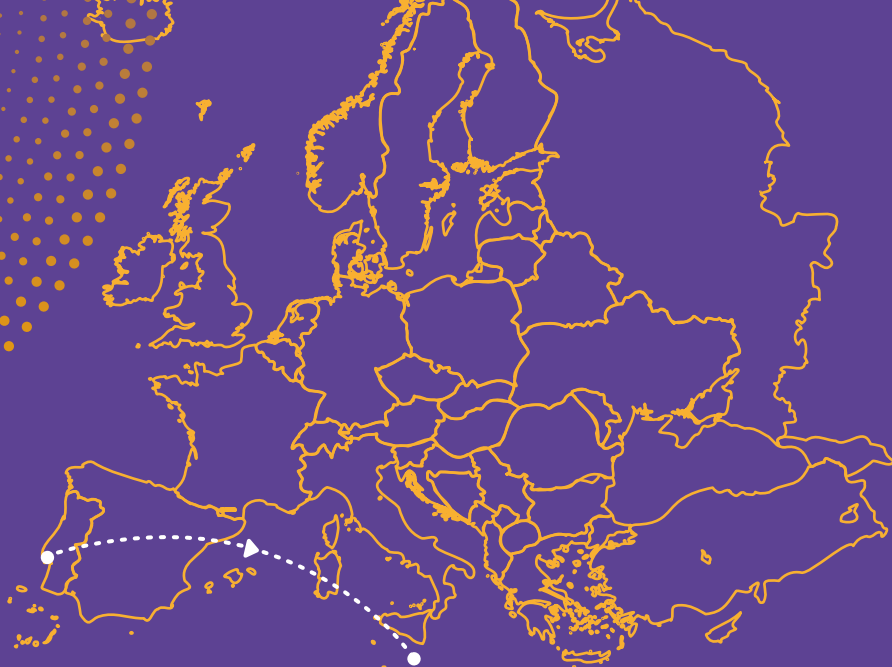
University of Malta

From

Lisbon,
Portugal

To

Msida,
Malta



Q1: Can you please share your name and say a few words about your exchange within the Junior Fellows Program?

My name is Pedro M. Fernandes and I am a PhD Candidate at INESC-ID and University of Lisbon, in Portugal. I participated in a hybrid exchange at the University of Malta, visiting Professor Georgios Yannakakis and his amazing team.

Q2: Can you please tell us about the objectives and results of your project in the context of the Junior Fellows exchange opportunity?

My PhD work is deeply aligned with the work done in the University of Malta on automated user experience testing. During my visit, I collaborated with other students, shared knowledge and developed novel user clustering methodologies that can be used on datasets from both my university and the University of Malta.

Q3: Can you please share one unique experience or insight you gained from your project and (if applicable) mobility experience, that would have been difficult to have otherwise?

Throughout my visit, I was able to have long conversations with many students and learn more about their work and their research. This has enabled me to better frame my work with regards to existing research and also to better understand different approaches that are being taken to tackle problems that are very similar to the ones I face on my own research.

Q4: Would you recommend this experience to your peers? What would you say to them?

I would certainly recommend this experience to my peers. Being able to visit other research institutions and talk with new peers is a most valuable opportunity to grow as a researcher and to create long lasting venues for cooperation.



Name of participant
Quentin Guimard

Sender institution
Côte d'Azur University

Host institution
University of Florence

From
Nice,
France

To
Florence,
Italy

Q1: Can you please share your name and say a few words about your exchange within the Junior Fellows Program?

My name is Quentin Guimard, I am a PhD student working on 360° video streaming at Université Côte d'Azur in France. I participated in the AI4Media Junior Fellows Exchange Program in 2021. It was a hybrid exchange and I spent one month in the University of Florence in Italy.

Q2: Can you please tell us about the objectives and results of your project in the context of the Junior Fellows exchange opportunity?

360° video streaming can benefit from predicting where the person is going to look in the video, allowing to send higher quality content inside the predicted field of view. However, existing head motion prediction methods only predict one possible trajectory, while we know that human motion can be very uncertain. Our goal was to design a prediction method that returns multiple possible trajectories of head motion, by benefiting from the expertise of the researchers from Florence, who had already been working on multiple trajectory prediction for autonomous driving applications. Together, we have been working on the design of a new deep learning model, called DVMS, that returns multiple possible trajectories of head motion, and our results show that it matches the state-of-the-art in single trajectory prediction and even outperforms the baseline adapted from the self-driving domain, for multiple trajectory prediction.

Q3: Can you please share one unique experience or insight you gained from your project and (if applicable) mobility experience, that would have been difficult to have otherwise?

Thanks to this collaboration, we were able to present this new prediction method at the ACM Multimedia Systems Conference, held in June 2022 in Ireland, where we received the best paper award for this contribution.

Q4: Would you recommend this experience to your peers? What would you say to them?

I encourage everyone who can to participate in the AI4Media Junior Fellows Exchange Program. It was a great experience for me to spend one month in Florence to work with talented researchers and I am very grateful for this opportunity.



Name of participant
Simone Barattin

Sender institution
University of Trento

Host institution
Queen Mary University
of London

From
Trento,
Italy

To
London,
United Kingdom



Q1: Can you please share your name and say a few words about your exchange within the Junior Fellows Program?

My name is Simone Barattin, I am a master's degree student from the University of Trento, in Italy, following the Artificial Intelligence Systems course. Thanks to AI4Media's Junior Fellows Exchange Program I was able to go abroad for an in-presence research internship at the Queen Mary University of London, in the UK. There I had the opportunity to work alongside a research group in order to make progress on my research on anonymization.

Q2: Can you please tell us about the objectives and results of your project in the context of the Junior Fellows exchange opportunity?

The objective of the exchange was to obtain scientifically relevant results on a topic related to the development, use, and evaluation of deep learning models. In particular, the chosen research topic was dataset anonymization. That is, given a dataset of human faces, the goal was to obtain a dataset from which no personal information could be retrieved while maintaining the facial attributes of the depicted subjects. At the end of the exchange period, we were able to obtain an anonymization system presenting a degree of novelty and with results comparable to the current state-of-the-art systems.

Q3: Can you please share one unique experience or insight you gained from your project and (if applicable) mobility experience, that would have been difficult to have otherwise?

From this experience, I was able to understand how a researcher works, both on his own and in a research group. Thanks to the guidance of the members of this group I was able to increase my know-how on how one should work, first along with other fellow researchers and second in the overall research community by searching through the vast number of scientific papers. This may not sound outstanding, but after experiencing it first-hand, I can definitely say that it is essential if one wants to work in this field.

Q4: Would you recommend this experience to your peers? What would you say to them?

I would definitely recommend this experience to my peers, as it can give an insight into how the field of research works so that if one is interested in continuing their academic career it would allow them to start with an already set knowledge. The possibility of exchanging ideas with others that have been working in the field for a longer time is also an appealing perspective. Overall, I would say that this is a great and interesting experience that one should have.



Name of participant
Yue Song

Sender institution
University of Trento

Host institution
University of Amsterdam

From
Trento,
Italy

To
Amsterdam,
The Netherlands



Q1: Can you please share your name and say a few words about your exchange within the Junior Fellows Program?

My name is Yue Song. The AI4Media Junior Fellows Exchange Program gave me the opportunity to study physically at the University of Amsterdam, in the Netherlands, which was a wonderful exchange experience for me.

Q2: Can you please tell us about the objectives and results of your project in the context of the Junior Fellows exchange opportunity?

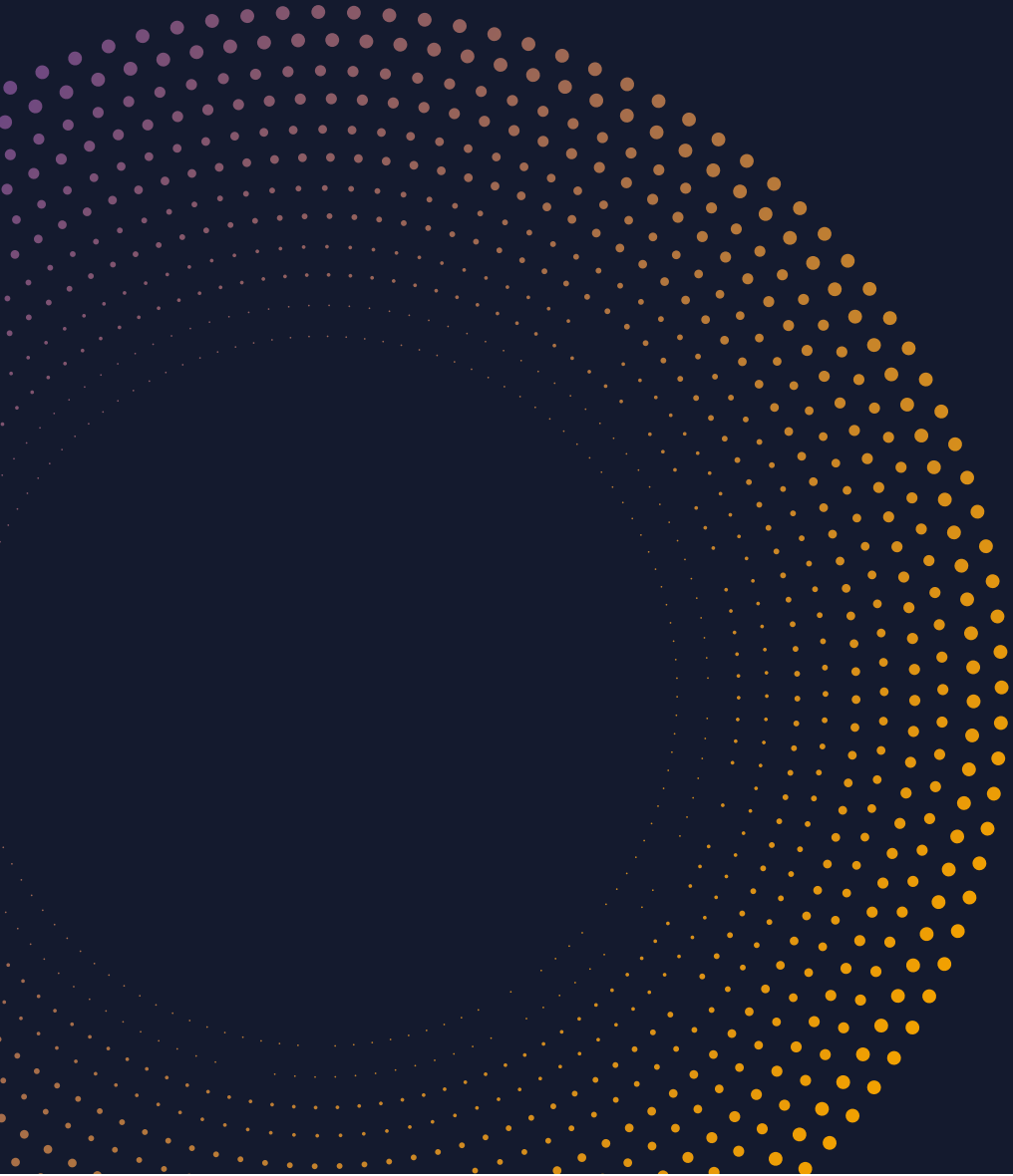
The project investigated how to model the latent particle movement of generative models. The project is expected to have one or two papers published on top-tier machine learning or computer vision venues.

Q3: Can you please share one unique experience or insight you gained from your project and (if applicable) mobility experience, that would have been difficult to have otherwise?

This exchange experience gave me an opportunity to apply for some mobility funding immediately, which can help me quickly start the program. Otherwise, I would need to wait for some time to start.

Q4: Would you recommend this experience to your peers? What would you say to them?

For sure I would recommend this program to my other peers. This is a great opportunity to allow you to conduct research in different areas and environments and cooperate with people from different fields.



Our Consortium



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